

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application.

**Listing of Claims:**

Please amend the claims as follows:

1. (previously presented) A cathode, said cathode formed by a cylindrical hollow part closed at a first end and open at a second end, wherein an outer and inner surface portion of said cylindrical hollow part includes a layer of getter material.
2. (original) The cathode as recited in claim 1, wherein said cylindrical hollow part is made essentially of metal.
3. (original) The cathode according to claim 2, wherein said metal includes material chosen from among the group consisting of nickel, molybdenum, tantalum and niobium.
4. (original) The cathode as recited in claim 1, wherein said layer of getter material is formed of a metal selected among the group consisting of: titanium, vanadium, yttrium, zirconium, niobium, hafnium and tantalum.
5. (original) The cathode as recited in claim 1, wherein said layer of getter material is an alloy that includes zirconium or titanium combined with one or more elements selected among the group of transition metals and aluminum.
6. (original) The cathode as recited in claim 1, wherein said getter layer is formed by cathodic deposition.

7. (original) The cathode as recited in claim 1, wherein said getter layer is formed by electrophoretic deposition.

8-14. (cancelled).

15. (original) The cathode as recited in claim 1, wherein said layer of getter material is less than 20 microns thick.

16. (cancelled).

17. (previously presented) A cathode, said cathode formed by a cylindrical hollow part closed at a first end and open at a second end, wherein on an outer or inner portion of the surface of said cylindrical hollow part is present a layer of getter material, and wherein a portion of said surface near said first end of said cathode is free of said layer of getter material.

18. (previously presented) The cathode of claim 17, wherein said cylindrical hollow part is made essentially of metal.

19. (previously presented) The cathode of claim 18, wherein said metal includes material chosen from among the group consisting of nickel, molybdenum, tantalum and niobium.

20. (previously presented) The cathode of claim 17, wherein said layer of getter material is formed of a metal selected among the group consisting of: titanium, vanadium, yttrium, zirconium, niobium, hafnium and tantalum.

21. (previously presented) The cathode of claim 17, wherein said layer of getter material is an alloy that includes zirconium or titanium combined with one or more elements selected among the group of transition metals and aluminum.

22. (previously presented) The cathode of claim 17, wherein said layer of getter material is formed by cathodic deposition.

23. (previously presented) The cathode of claim 17, wherein said layer of getter material is formed by electrophoretic deposition.

24-28. (cancelled)

29. (currently amended) The cathode of claim 17, wherein ~~the~~ a portion of said surface near said second end is at least partially covered by said layer of getter material.

30. (previously presented) The cathode of claim 17, wherein said getter layer is present on the inner portion of the said surface.

31. (previously presented) The cathode of claim 17, wherein said getter layer is present on the outer portion of the said surface.

32. (previously presented) The cathode of claim 17, wherein said getter layer is present on the inner and outer portion of the said surface.

33. (previously presented) The cathode of claim 17, wherein a portion of said surface near the second end of said cathode is free of said layer of getter material.

34. (new) A cylindrical hollow cathode having a first end and a second end, wherein the second end of the cylindrical hollow cathode is closed, and wherein an inner surface of the cylindrical hollow cathode is partially covered by a layer of getter material.